

IN THE CLAIMS

The following is a complete listing of the claims, and replaces all earlier versions and listings.

1. and 2. (Canceled)

3. (Currently Amended) ~~The A decoding apparatus according to claim 2,~~
for decoding an input signal which includes a code stream and data having time
management information about decoding of the code stream, comprising:
buffering means for buffering the input signal;
decoding means for reading out the input signal from said buffering
means, decoding the input signal, and writing decoded data in a predetermined memory;
output means for outputting the decoded data from the
predetermined memory; and
control means for controlling said buffering means and said
decoding means on the basis of the time management information,
wherein said control means checks a time necessary for decoding
from the time management information, checks whether processing ends within a limit
time, and when the time reaches the limit time before processing of all data ends, controls
said decoding means to write decoded data in the predetermined memory, and
wherein, when the time reaches the limit time before processing of
all data ends, said control means checks whether the decoded data [[have]] has an image
quality not lower than a preset lowest image quality and, if the image quality is not higher

than the lowest image quality, newly adds time management information to add a processing time of next data to a processing time of current data, and discards the next data.

4. (Currently Amended) The apparatus according to claim [[1]] 3, wherein said decoding means reads out data from said buffering means in accordance with priority set by said control means, decodes the data, and writes the data at a position having the same priority in the predetermined memory.

5. (Original) The apparatus according to claim 4, wherein said decoding means uses as a processing unit a tile obtained by dividing a frame at a predetermined size.

6. (Original) The apparatus according to claim 4, wherein the priority set by said control means is determined to change for each frame so as to prevent priority at the same position from being the same between successive frames.

7. (Original) The apparatus according to claim 5, wherein the priority set by said control means is determined to be high at a tile of each frame near a center of a screen.

8. (Currently Amended) The apparatus according to claim [[2]] 3, wherein when the time reaches the limit time before processing of all data ends, said output means

outputs the decoded data written in the predetermined memory with an image size corresponding to a size of the written data.

9. (Currently Amended) ~~The A decoding apparatus according to claim 2,~~
for decoding an input signal which includes a code stream and data having time
management information about decoding of the code stream, comprising:

buffering means for buffering the input signal;

decoding means for reading out the input signal from said buffering
means, decoding the input signal, and writing decoded data in a predetermined memory;

output means for outputting the decoded data from the
predetermined memory; and

control means for controlling said buffering means and said
decoding means on the basis of the time management information,

wherein said control means checks a time necessary for decoding
from the time management information, checks whether processing ends within a limit
time, and when the time reaches the limit time before processing of all data ends, controls
said decoding means to write decoded data in the predetermined memory, and

wherein, when the time reaches the limit time before processing of
all data ends, said control means checks whether the decoded data ~~[[have]]~~ has an image
size not smaller than a preset smallest image size and, if the image size is not larger than
the smallest image size, newly adds time management information to add a processing time
of next data to a processing time of current data, and discards the next data.

10. and 11. (Canceled)

12. (Currently Amended) The A method according to claim 11, of controlling a decoding apparatus for decoding an input signal which includes a code stream and data having time management information about decoding of the code stream,

comprising:

a buffering step, of buffering the input signal in a predetermined buffer;

a decoding step, of reading out the input signal from the predetermined buffer, decoding the input signal, and writing decoded data in a predetermined memory;

a output step, of outputting the decoded data from the predetermined memory; and

a control step, of controlling at least one of said buffering step, said decoding step, and said output step on the basis of the time management information,

wherein said control step includes determining a time necessary for decoding from the time management information, checking whether processing ends within a limit time, and when the time reaches the limit time before processing of all data ends, controlling said decoding step to write decoded data in the predetermined memory, and

wherein in the said control step further includes, when the time reaches the limit time before processing of all data ends, checking whether the decoded data [[have]] has an image quality not lower than a preset lowest image quality is checked and, if the image quality is not higher than the lowest image quality, newly adding time

management information is ~~newly added~~ to add a processing time of next data to a processing time of current data, and discarding the next data is ~~discarded~~.

13. (Currently Amended) The method according to claim [[10]] 12, wherein in ~~the~~ said decoding step, data is read out from [[the]] said buffering step in accordance with priority set in [[the]] said control step, decoded, and written at a position having the same priority in the predetermined memory.

14. (Currently Amended) The method according to claim 13, wherein in [[the]] said decoding step, a tile obtained by dividing a frame at a predetermined size is used as a processing unit.

15. (Currently Amended) The method according to claim 13, wherein the priority set in [[the]] said control step is determined to change for each frame so as to prevent priority at the same position from being the same between successive frames.

16. (Currently Amended) The method according to claim 14, wherein the priority set in [[the]] said control step is determined to be high at a tile of each frame near a center of a screen.

17. (Currently Amended) The method according to claim [[11]] 12, wherein in [[the]] said output step, when the time reaches the limit time before processing

of all data ends, the decoded data written in the predetermined memory are output with an image size corresponding to a size of the written data.

18. (Currently Amended) ~~The A method according to claim 11, of~~
controlling a decoding apparatus for decoding an input signal which includes a code stream
and data having time management information about decoding of the code stream,
comprising:

a buffering step, of buffering the input signal in a predetermined
buffer;

a decoding step, of reading out the input signal from the
predetermined buffer, decoding the input signal, and writing decoded data in a
predetermined memory;

a output step, of outputting the decoded data from the predetermined
memory; and

a control step, of controlling at least one of said buffering step, said
decoding step, and said output step on the basis of the time management information,

wherein said control step includes determining a time necessary for
decoding from the time management information, checking whether processing ends within
a limit time, and when the time reaches the limit time before processing of all data ends,
controlling said decoding step to write decoded data in the predetermined memory, and

wherein in the said control step further includes, when the time
reaches the limit time before processing of all data ends, determining whether the decoded
data [[have]] has an image size not smaller than a preset smallest image size is determined

and, if the image size is not larger than the smallest image size, newly adding time management information ~~is newly added~~ to add a processing time of next data to a processing time of current data, and discarding the next data ~~is discarded~~.

19. (Currently Amended) A storage medium which stores program codes functioning as a decoding apparatus for decoding an input signal which includes a code stream and data having time management information about decoding of the code stream, comprising:

[[a]] program code of [[the]] a buffering step₁ of buffering the input signal in a predetermined buffer;

[[a]] program code of [[the]] a decoding step₂ of reading out the input signal from the predetermined buffer, decoding the input signal, and writing decoded data in a predetermined memory;

[[a]] program code of [[the]] an output step₃ of outputting the decoded data from the predetermined memory; and

[[a]] program code of [[the]] a control step₄ of controlling at least one of the buffering step, the decoding step, and the output step on the basis of the time management information₅

wherein the control step includes determining a time necessary for decoding from the time management information, checking whether processing ends within a limit time, and when the time reaches the limit time before processing of all data ends, controlling execution of said program code of the decoding step to write decoded data in the predetermined memory, and

wherein the control step further includes, when the time reaches the limit time before processing of all data ends, checking whether the decoded data has an image quality not lower than a preset lowest image quality and, if the image quality is not higher than the lowest image quality, newly adding time management information to add a processing time of next data to a processing time of current data, and discarding the next data.

20. (Original) The apparatus according to claim 3, further comprising lowest image quality setting means for setting the lowest image quality.

21. (Original) The apparatus according to claim 20, wherein said lowest image quality setting means sets the lowest image quality in accordance with processing performance of said decoding means.

22. (Original) The apparatus according to claim 21, wherein said lowest image quality setting means sets the lowest image quality on the basis of relationship between the processing performance of said decoding means and a designated playback speed.

23. (Original) The apparatus according to claim 22, wherein the apparatus further comprises a first table representing the relationship between the playback speed and the lowest image quality, and

said lowest image quality setting means sets the lowest image quality corresponding to the designated playback speed with reference to the first table.

24. (Original) The apparatus according to claim 9, further comprising smallest image size setting means for setting the smallest image size.

25. (Original) The apparatus according to claim 24, wherein said smallest image size setting means sets the smallest image size in accordance with processing performance of said decoding means.

26. (Original) The apparatus according to claim 25, wherein said smallest image size setting means sets the smallest image size on the basis of relationship between the processing performance of said decoding means and a designated playback speed.

27. (Original) The apparatus according to claim 26, wherein
the apparatus further comprises a second table representing the relationship between the playback speed and the smallest image size, and
said smallest image size setting means sets the smallest image size corresponding to the designated playback speed with reference to the second table.

28. (Currently Amended) The method according to claim 12, further comprising [[the]] a lowest image quality setting step, of setting the lowest image quality.

29. (Currently Amended) The method according to claim 28, wherein in [[the]] said lowest image quality setting step, the lowest image quality is set in accordance with processing performance of [[the]] said decoding step.

30. (Currently Amended) The method according to claim 29, wherein in [[the]] said lowest image quality setting step, the lowest image quality is set on the basis of the relationship between the processing performance of [[the]] said decoding step and a designated playback speed.

31. (Currently Amended) The method according to claim 30, wherein in [[the]] said lowest image quality setting step, the lowest image quality corresponding to the designated playback speed is set with reference to a first table representing the relationship between the playback speed and the lowest image quality.

32. (Currently Amended) The method according to claim 18, further comprising [[the]] a smallest image size setting step, of setting the smallest image size.

33. (Currently Amended) The method according to claim 32, wherein in [[the]] said smallest image size setting step, the smallest image size is set in accordance with a processing performance of [[the]] said decoding step.

34. (Currently Amended) The method according to claim 33, wherein in [[the]] said smallest image size setting step, the smallest image size is set on the basis of

the relationship between the processing performance of ~~[[the]]~~ said decoding step and a designated playback speed.

35. (Currently Amended) The method according to claim 34, wherein in ~~[[the]]~~ said smallest image size setting step, the smallest image size corresponding to the designated playback speed is set with reference to a second table representing the relationship between the playback speed and the smallest image size.